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Dated: DEC 14, 2005 Signature: Reza Mollaaghababa

(Reza Mollaaghababa)

Docket No.: 102323-0104  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
John H. Oates et al.

Application No.: 10/099,889

Confirmation No.: 5417

Filed: March 14, 2002

Art Unit: 2666

For: WIRELESS COMMUNICATIONS SYSTEMS  
AND METHODS FOR DIRECT MEMORY  
ACCESS AND BUFFERING OF DIGITAL  
SIGNALS FOR MULTIPLE USER  
DETECTION

Examiner: S. S. Rao

**AMENDMENT IN RESPONSE TO NON-FINAL OFFICE ACTION**

MS Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action dated September 14, 2005, please amend the above-identified U.S. patent application as follows:

**Amendments to the Abstract** begin on page 2 of this paper.

**Amendments to the Claims** are reflected in the listing of claims which begins on page 3 of this paper.

**Remarks/Arguments** begin on page 5 of this paper.

**AMENDMENTS TO THE ABSTRACT**

Please substitute the following paragraph(s) for the abstract now appearing in the currently filed specification:

The invention provides methods and apparatus for multiple user detection (MUD) processing that have application, for example, in improving the capacity CDMA and other wireless base stations. ~~One aspect of the invention provides a multiprocessor, multiuser detection system for detecting user transmitted symbols in CDMA short code spectrum waveforms. A first processing element generates a matrix (hereinafter, "gamma matrix") that represents a correlation between a short code associated with one user and those associated with one or more other users. A set of second processing elements generates, e.g., from the gamma matrix, a matrix (hereinafter, "R matrix") that represents cross correlations among user waveforms based on their amplitudes and time lags. A third processing element produces estimates of the user transmitted symbols as a function of the R matrix.~~ One aspect of the invention provides a digital signal processor ("DSP") that processes user waveforms. The DSP has an associated memory and an associated direct memory access ("DMA") controller that controls access to that memory. A programmable logic device ("PLD") is coupled to the DMA controller and configures it to move data relating to user waveform characteristics from the memory to a buffer external to the DSP.